RAMROD XL2

OPERATING SYSTEM EXPANSION BOARD

FOR ATARI 800XL/65XE/130XE COMPUTERS

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The Ramrod XL2 operating system expansion board will allow the use of up to three operating systems in the 800XL or 130XE computers.

Use those operating systems you've heard about. 80 column operating systems. 800 compatible operating systems. Etc. Plus, keep original operating system in the computer and just flip a switch to choose the one you want to use.

Contact your dealer or Newell Industries for more information. Installations availible.

RAMROD XL 2
INSTALLATION NOTES

Disregard socket orientation. Some boards have the sockets installed backwards. Refer to pin 1 on the board. All OS chips install with the notch to the left.

Use the RAMROD-XL installation instructions included, with the following exceptions.
1.ITEM 9. change "the center position" to "proper position".

TESTING NOTES

Disregard the RAMROD-XL testing instrutions included, with the following exceptions.
1.ITEM 3.

RAMROD XL UPDATES

SOCKETS;

With the lowering of price of the 800 XL computers, it has been brought to our attention that some of the recently manufactured computers do not have sockets for some or all of the IC's. The chips are soldered directly to the board. If this is the case with your computer, you will have to remove the operating system (OS) chip to install the Ramrod XL. This should be done using a heat sink on the IC, and a solder sucker to remove the solder. After removal of the OS IC, you may either install a socket in which to install the Ramrod XL, or solder the Ramrod XL directly to the board. You will have better reliability soldering the Ramrod XL directly to the board, but you loose the flexability of being able to remove it easily. In either case, this should be accomplished by someone with good soldering experience.

You may want to back up your XL OS. Contact Newell Industries for a backup copy, or use the information below to make your own backup.

THE XL OPERATING SYSTEM;

The XL OS chip contains 16K of read only memory (ROM), addressed in the rom from 0000-3FFF (hex). The OS is located as follows.

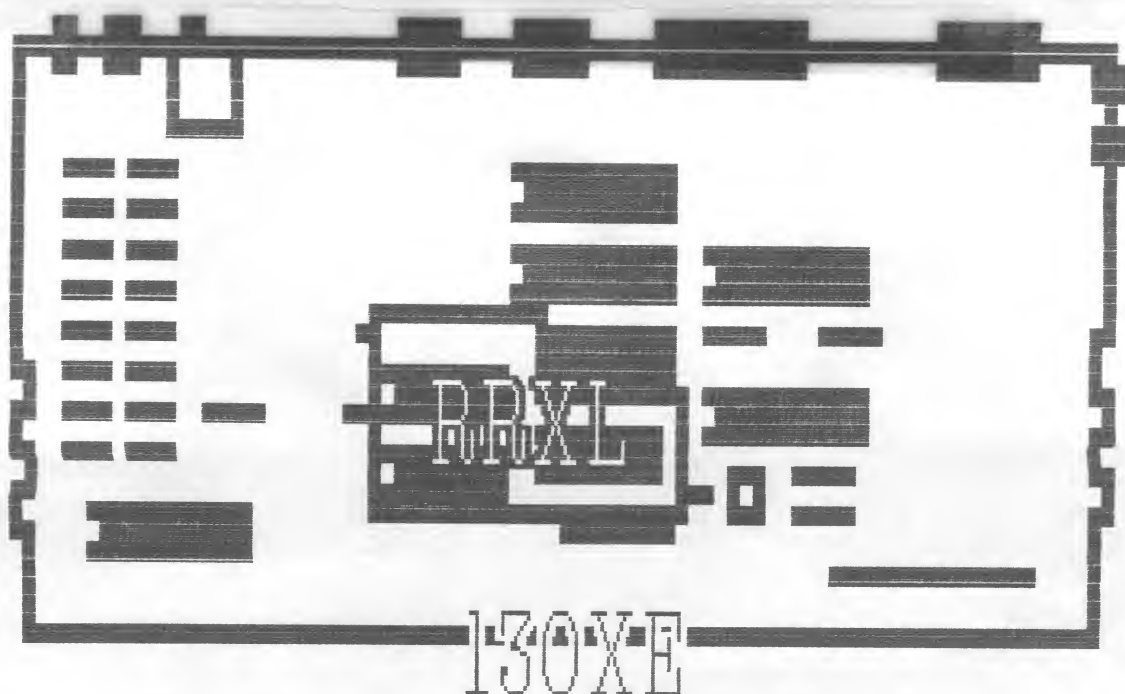| ROM ADDRESS	COMPUTER ADDRESS	FUNCTION
0000-0FFF	C000-CFFF	OS
1000-17FF	5000-57FF	Diagnostic (see note)
1800-1FFF	D800-DFFF	Floating Point Routines
2000-3FFF	E000-FFFF	OS

THE OSNXL OPERATING SYSTEM;

ROM ADDRESS	COMPUTER ADDRESS	FUNCTION
0000-0FFF	C000-CFFF	Omnimon
1000-17FF	5000-57FF	Omnimon (see note)
1800-1FFF	D800-DFFF	Fastchip Floating Point Routines
2000-3FFF	E000-FFFF	OS

NOTE: This portion of the rom is only visible to the computer when bit 7 of address $D301 is 0. When this occures, this portion of the OS rom is mapped over the ram at location $5000.

INSTALLATION INSTRUCTIONS
RAMROD XL IN 130XE

Remove the four screws from the bottom of the computer. Turn the computer upright and lift the top cover off. Lift the keyboard up slowly and unplug from the motherboard. Remove the RF shield top half. This may have tabs or screws. Remove the screws securing the motherboard to the bottom case and lift the motherboard out of the case. Locate the 28 pin operating system chip (there is only one 28 pin chip) close to the center of the motherboard. Unsolder and remove this chip using caution not to damage it.(This should be done by someone that has soldering experience) Install the RAMROD XL board into the now empty 28 pin pad on the motherboard and solder. You may want to trim the excess socket pins off of the bottom of the RAMROD XL board. DO NOT trim the header leads. The RAMROD XL board should be installed so that the reverse 'L' is facing the rear of the computer. If desired, install the XE OS chip in one of the sockets of the RAMROD XL board. The notch in the chip should face the left side of the computer. The RAMROD XL board should fit as far into the motherboard as possible to allow clearance for the RF shield. If the 40 pin IC beside the OS is in a socket, then you must remove this socket and solder this IC directly to the motherboard for the Ramrod XL to have clearance to mount directly to the motherboard. You may use a socket to install The Ramrod XL, but the clearance between the top of the Ramrod XL and the RF sheild will be critical and we do not recomend this method.
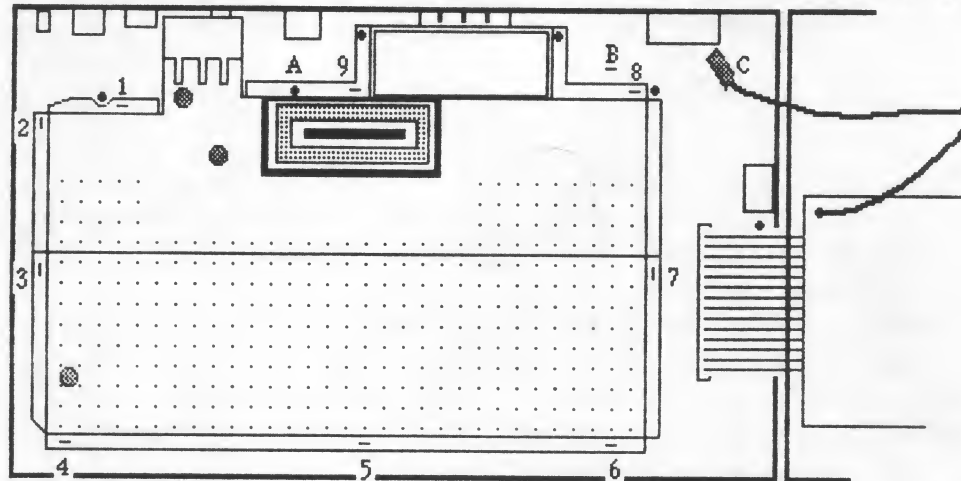
Before reinstalling the motherboard, using a suitable tool, cut or break off the plastic post that would protrude through the motherboard and hit the RAMROD XL. Although this looks to be a support for the keyboard, you will notice that it does not support anything. Determine where to mount the switch and drill a suitable hole for it. Make sure that the cable will reach the location you have choosen once the RF sheild is in place. Assemble the computer and test.
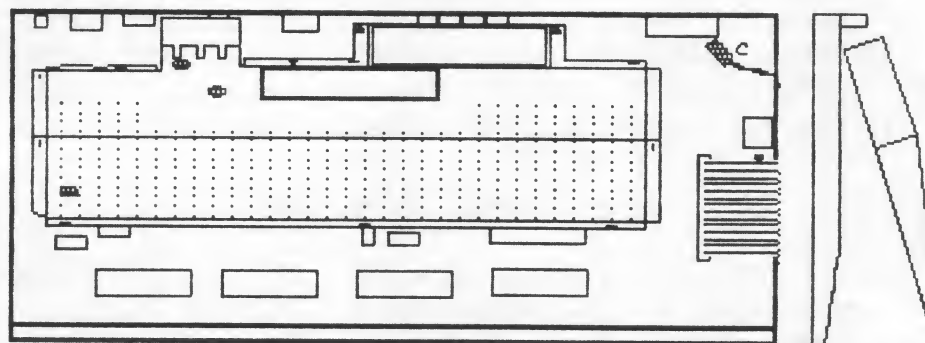

130XE

RAMROD-XL Installation Instructions

<u>Tools Required</u>: Crosspoint screwdriver, flat blade screwdriver, pliers, drill

1) Turn the computer upside down and remove the six crosspoint screws holding the case together.

2) Turn the computer upright and lift the top half of the case from the left, pivoting on the right edge, and lay it upside down to the right of the bottom half as shown below. You will need to pull off the spadelug connector C from B, but leave the keyboard cable connected for now.
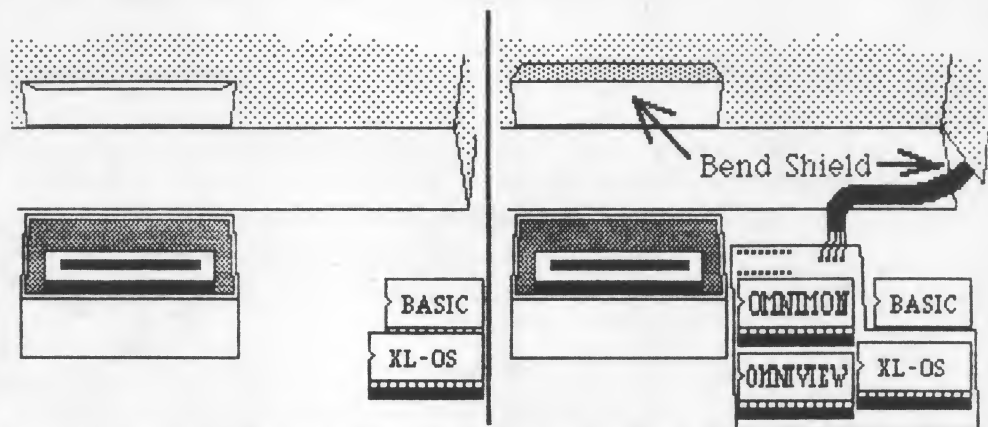

3) Now we wish to gain access to the area underneath the metal shield. If your computer has a single screw (A) and tabs around the edge (1-9) holding the shield down, go to 3A. If there are screws (with nuts) holding the shield down, go to 3B.

   3A) Simply remove the screw and straighten the tabs so that you can lift the shield from the front, pivoting about 30 degrees on the remaining two screws at the back. This will bend the two metal tabs at the back slightly but this is of little consequence (see diagram below). Go to step 4.

   3B) You will need to remove the motherboard from the bottom half of the case. In this case you will probably want to disconnect the keyboard cable by gently pulling it out of the connector on the motherboard. Remove the remaining screws holding the motherboard to the case (near 1, near 8 and between the joystick ports) and remove it by lifting from the left side and prying the case around the joystick ports on the right. It is a tight fit but it should pop out. Once the motherboard is free, you can remove the nuts and screws holding the shield to the motherboard. It is recommended that you leave the two at the back on either side of the expansion port. In this way you can lift the shield from the front to about a 30 degree angle, bending the back tabs slightly (see the diagram above).

4) Now you will need to modify the shield slightly. Refer to the diagram at the top of the next page while doing these modifications. First, use broad pliers (not needle nose) to bend the flap at the front of the cartridge slot up flat against the underside of the shield. This flap will otherwise interfere with the RAMROD-XL. Next, bend out the right side toward the back to create a 1/4 inch gap. You can do this easily with your fingers.

Bend Shield →

BASIC
XL-OS

OMNIMON   BASIC
OMNIVIEW   XL-OS

5) Now you are ready to install the RAMROD-XL. Refer to the diagram above. First locate the XL-OS chip, a 28 pin chip about 2 inches to the right of the cartridge slot. Remove it by inserting the flat screwdriver between the chip and the socket and gently prying and rotating the screwdriver.

6) Insert the XL-OS chip you just removed into the RAMROD-XL board in the indicated socket. **Make careful note of the orientation of the chip, otherwise you may burn it up!**

7) If you purchased OMNIVIEW also, plug it into the indicated socket if it is not already there.

8) Plug the RAMROD-XL into the empty OS socket as indicated in the diagram above. Route the cable through the gap in the corner of the shield.

9) If you wish, you can do a preliminary test by applying power to the motherboard. With the RAMROD-XL switch in the center position, the screen should come up with the READY prompt of BASIC. If this does not work, check to see that the RAMROD-XL board is seated well in the socket on the OS board.

10) Reinstall the shield by securing it to the motherboard with the metal tabs and/or screws.

11) If you had to remove the motherboard from the bottom of the case, pop it back into place and secure it with the screws. Likewise, carefully insert the keyboard cable back into the connector on the motherboard by using both hands to gently push it in.

12) You will probably want to mount the switch in the back righthand corner of the case just to the right of the peripheral connector. Drill an appropriate size hole and mount the switch.

13) Complete the installation by resecuring the top of the case with the six screws.

Testing the RAMROD-XL

1) Power up the computer with the RAMROD-XL switch in the center position. If you do not get a READY prompt then go back and check the installation. Otherwise, hold down SELECT and press RESET. This should take you into OMNIMONXL indicating the OSNXL/OMNIMONXL is active.

2) Flip the toggle switch to another position and press RESET. If you get a READY prompt, type 'B.(RETURN)'. This should take you into the diagnostic routines of OSXL. Otherwise, this position should yield a blank screen (if that socket is blank) or the memo pad (if that socket has OSNXL/OMNIVIEW).

3) Once you have determined which switch position corresponds to which OS, you might want to label these positions next to the switch.

For the operation of OMNIMONXL and OMNIVIEWXL, refer to their user's manuals. It should be noted that all three sockets of RAMROD-XL are identical, so that any OS could go in any socket. Also, there are pads for a 16 pin IC for you hackers to do with what you want. If you have any questions or encounter problems during the installation, call Newell Industries at 214-423-1781 (no collect calls accepted) and we will be glad to assist you.